

ABSTRACT

In Indonesia, chicken farmers are in crisis because of the extreme weather conditions, poultry species are very vulnerable to changes in temperature and humidity that occur in their surroundings. It takes a system that is able to regulate the temperature in the chicken coop, so a system is made called smart poultry farm. Smart poultry farm is a concept where farmers can control the temperature level in the chicken coop automatically which will improve the quality of life of livestock.

In this final project, a chicken coop prototype was made that focuses on temperature control systems on smart poultry farms, using the PID control method. With the PID control method, it is expected that the temperature control system can adapt to the temperature in the cage so as to facilitate the work of chicken farmers. The sensor used is a DHT22 sensor which has an average accuracy value of 96.88% obtained from the results of sensor calibration tests.

In this study, the results of the PID response were good for the system with a value of $K_p = 10$, $K_i = 0$, $K_d = 0.1$ and the time required by the system to reach the desired temperature was 121 seconds with an error of 1.03%.

Keywords: smart poultry farm, temperature sensor, PID control